



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Richard A. Blanchard  
Application No.: 10/770,045  
Date Filed: 02/02/2004  
Title: POWER SEMICONDUCTOR DEVICE HAVING A VOLTAGE SUSTAINING REGION THAT INCLUDES DOPED COLUMNS FORMED WITH A SINGLE ION IMPLANTATION STEP  
Group Art Unit: 2812  
Examiner: Unassigned  
Atty. Docket: GS 159 D1

**SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT (IDS)**

Mail Stop DD  
Assistant Commissioner For Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

SIR:

In accordance with 37 C.F.R. §1.56 and in compliance with 37 C.F.R. §§1.97 and 1.98, the references listed on attached Form PTO/SB/08 and/or subsequently identified herein, are being submitted herewith for consideration by the United States Patent and Trademark Office.

I. COPIES

- a.  A legible copy of (i) each foreign patent; (ii) each publication or that portion which caused it to be listed; and (iii) all other information or that portion which caused it to be listed, is included herewith.
- b.  Any patents, publications or other information which are listed on PTO/SB/08 which are not enclosed herewith were previously cited by or submitted to the PTO in one of the following applications which has been relied upon for an earlier filing date under 35 U.S.C. §120:

U.S. Serial Number

U.S. Filing Date

II. CONCISE EXPLANATION OF THE RELEVANCE (check at least one box)

- a.  Except as may be indicated below in (b) of this section, all of the patents, publications or other information are in the English language (concise explanation not required).
- b.  A concise explanation of the relevance of all patents, publications or other information listed that is not in the English language is as follows:
- c.  The following additional information is provided for the Examiner's consideration:

III.  CROSS REFERENCE TO RELATED APPLICATION(S)

The Examiner is advised that the following co-pending application(s) contain(s) subject matter that may be related to the present application. By bringing this (these) applications to the Examiner's attention, Applicant(s) does(do) not waive the confidentiality provisions of 35 U.S.C. §122.

Serial No.

Filing Date

Art Unit

**FEES**

- IV.  **THIS IDS IS BEING FILED UNDER 37 C.F.R. §1.97(b):** (check one box)
- a.  within three months of the filing date of a national application other than a continued prosecution application under § 1.53(d) (37 C.F.R. §1.97(b)(1)). No fee or statement is required.
- b.  within three months of the date of entry of the national stage as set forth in § 1.491 in an international application (37 C.F.R. §1.97(b)(2)). No fee or statement is required.
- c.  before the mailing date of a first Office Action on the merits (37 C.F.R. §1.97(b)(3)). No fee or statement is required.
- d.  before the mailing date of a first Office Action after the filing of a request for continued examination under § 1.114 (37 C.F.R. § 1.97(b)(4)). No fee or statement is required.
- V.  **THIS IDS IS BEING FILED UNDER 37 C.F.R. §1.97(c):** (check one box)
- before the mailing date of any of a Final Office Action under 37 C.F.R. §1.113, a Notice of Allowance under 37 C.F.R. §1.311, or an action that otherwise closes prosecution in the application (See 37 C.F.R. §1.97(c)).
- a.  No statement; therefore, charge deposit account 50-1047 the fee set forth in 37 C.F.R. §1.17(p).
- b.  See the statement below. No fee is required.
- VI.  **THIS IDS IS BEING FILED UNDER 37 C.F.R. §1.97(d):**  
on or before payment of the issue fee and is accompanied by the following:
- 1) a statement under 37 C.F.R. §1.97(e) as provided below; and
  - 2) charge deposit account 50-1047 the petition fee set forth in §1.17(p).
- VII.  **STATEMENT UNDER 37 C.F.R. §1.97(e)** (check only one box, if applicable)
- The undersigned hereby states that
- a.  each item of information contained in the IDS was cited in a communication from a foreign Patent Office in a counterpart foreign application not more than three months prior to the filing of IDS; or
- b.  no item of information contained in the IDS was cited in a communication from a foreign Patent Office in a counterpart foreign application, and to knowledge of the person signing the statement after making reasonable inquiry, no item of information contained in the IDS was known to any individual designated in 37 C.F.R. 1.56(c) more than three months prior to the filing of this statement, or
- c.  some of the items of information contained in the IDS were cited in a communication from a foreign Patent Office. As to this information, the undersigned states that each item of information contained in the IDS was cited in a communication from a foreign Patent Office in a counterpart foreign application not more than three months prior to the filing of this IDS. As to the remaining information, the undersigned hereby states that no item of this remaining information contained in the IDS was cited in a communication from a foreign Patent Office in a counterpart foreign application or, to the knowledge of the person signing the statement after making reasonable inquiry, no item of information contained in the IDS was known to any individual designated in 37 C.F.R. 1.56(c) more than three months prior to the filing of this statement.

VIII. **PAYMENT OF FEES**

- A check in the amount of \_\_\_\_\_ is enclosed for the above-identified fee(s).
- Please charge Deposit Account No. 50-1047 in the amount of \$180.00 for the above-indicated fee(s).
- If Applicant has overlooked any additional fees, or if any overpayment has been made, the Commissioner is hereby authorized to credit or debit Deposit Account 50-1047.
- Two Copies of this paper are attached for Deposit Account charges and debits.

It is Applicant(s)' opinion that the claims presently on file patently distinguish the present invention from each of these references. The above references are being cited only in the interests of candor and without any admission that they constitute statutory prior art or contain matter which anticipates the invention or which would render the same obvious, either singly or in a combination, to a person of ordinary skill in the art.

If the Examiner has any questions concerning this IDS, he/she is requested to contact the undersigned. If it is determined that this IDS has been filed under the wrong rule, the PTO is requested to consider this IDS under the proper rule (with a petition if necessary) and charge the appropriate fee to Deposit Account No. 50-1047.

Respectfully submitted,



Stuart H. Mayer  
Attorney for Applicant(s)  
Reg. No. 35,277  
Tel. 908-518-7700  
Fax: 908-518-7795

MAYER FORTKORT & WILLIAMS  
Customer Number 27774

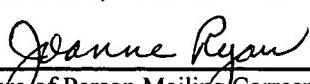
- Enclosures:
- PTO/SB/08
  - References (US patent references omitted)
  - Foreign Search Report
  - Other:

Certificate of Mailing by First Class Mail

I certify that this document and fee is being deposited

5/7/04 with the U.S. Postal Service as first class mail

under 37 C.F.R. 1.8 and is addressed to the Mail Stop DD, Commissioner for  
Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

  
\_\_\_\_\_  
Signature of Person Mailing Correspondence

Joanne Ryan  
\_\_\_\_\_  
Typed or Printed Name of Person Mailing Certificate

Docket No.: GS 159 D1



Please type a plus sign (+) inside this box. FORM PTO/SB/08

Substitute for form 1449A/PTO				<i>Complete if Known</i>	
<b>SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  <i>(use as many sheets as necessary)</i>				Application Number	10/770,045
				Filing Date	02/02/2004
				First Named Inventor	Richard A. Blanchard
				Group Art Unit	2812
				Examiner Name	Unassigned
Sheet	1	of	3	Attorney Docket Number	GS 159 D1

Examiner Initials*	Cite No. <sup>1</sup>	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY
		Number	Class/Subclass		
1.	4,140,558	148/175	Murphy et al.	02/20/1979	
2.	4,419,150	148/187	Soclof	12/06/1983	
3.	4,569,701	148/188	Oh	02/11/1986	
4.	4,711,017	437/20	Lammert	12/08/1987	
5.	4,719,185	257/525	Goth	01/1988	
6.	4,754,310	257/287	Coe	06/1988	
7.	4,914,058	438/270	Blanchard	04/1990	
8.	4,929,563	257/173	Tsunoda et al.	05/1990	
9.	5,108,783	437/63	Tanigawa et al.	04/28/1992	
10.	5,488,236	257/132	Baliga et al.	01/1996	
11.	5,831,288	257/330	Singh et al.	11/1998	
12.	5,981,332	438,246	Mandelman et al.	11/09/1999	
13.	6,097,076	257/510	Gonzalez et al.	08/2000	
14.	6,194,741	257/329	Kinzer et al.	02/2001	
15.	6,362,505	257/329	Tihanyi	03/2002	
16.	6,380,569	257/256	Chang et al.	04/2002	
17.	6,465,304	438/268	Blanchard	10/15/2002	

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	T
		Office <sup>3</sup>	Number <sup>4</sup>	Class/Subclass			

Examiner Signature	Date Considered
--------------------	-----------------

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation, if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> See Kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English Language Translation is attached.

+

Please type a plus sign (+) inside this box. FORM PTO/SB/08

Substitute for form 1449A/PTO  <b>SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> <i>(use as many sheets as necessary)</i>				<i>Complete if Known</i>	
Sheet	2	of	3	Application Number	10/770,045
				Filing Date	02/02/2004
				First Named Inventor	Richard A. Blanchard
				Group Art Unit	2812
				Examiner Name	Unassigned
				Attorney Docket Number	GS 159 D1

Examiner Initials*	Cite No. <sup>1</sup>	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY
		Number	Class/Subclass		
18.	6,468,847	438/197	Disney	10/22/2002	
19.	6,566,201	438/268	Blanchard	05/20/2003	
20.	6,624,494	257/493	Blanchard et al.	09/23/2003	
21.	6,649,477	438/268	Blanchard et al.	11/18/2003	
22.	6,656,797	438/268	Blanchard	12/02/2003	
23.	6,686,244	438/268	Blanchard	02/03/2004	
24.	6,710,400	257/328	Blanchard	03/23/2004	
25.	US 2001/0041400	438/200	Ren et al.	11/2001	
26.	US2001/0026977A1	438/268	Hattori et al.	10/04/2001	
27.	US2001/0046753A1	438/424	Gonzalez et al.	11/29/2001	
28.	US2001/0036704A1	438/270	Huetting et al.	04/2001	
29.	US2001/0053568A1	438/138	Deboy et al.	03/2001	
30.	US2002/0008258	257/273	Baba	01/2002	
31.	US2002/0132405	438/268	Disney	09/2002	
32.	US2002/0135014	438/268	Ahlers et al.	09/2002	
33.	US2002/0117715A1	257/339	Opperman et al.	08/2002	
34.	H0,000,204	438/433	Oh et al.	02/1987	

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	T
		Office <sup>3</sup>	Number <sup>4</sup>	Class/Subclass			

Examiner Signature	Date Considered
--------------------	-----------------

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation, if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> See Kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English Language Translation is attached.

Please type a plus sign (+) inside this box. FORM PTO/SB/08

Substitute for form 1449A/PTO				<i>Complete if Known</i>	
<b>SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> <i>(use as many sheets as necessary)</i>				Application Number	10/770,045
				Filing Date	02/02/2004
				First Named Inventor	Richard A. Blanchard
				Group Art Unit	2812
				Examiner Name	Unassigned
Sheet	3	of	3	Attorney Docket Number	GS 159 D1

#### **OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS**

<b>Examiner Signature</b>		<b>Date Considered</b>	
-------------------------------	--	----------------------------	--

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation, if not in conformance and not considered. Include copy of this form with next communication to applicant.